

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 1. (Original) A medical method for treating a person, the method
2 comprising:
3 delivering a positive pressure breath to the person;
4 extracting respiratory gases from the person's airway using a vacuum following
5 the positive pressure breath to create an intrathoracic vacuum to lower pressures in the heart and
6 to enhance blood flows back to the heart; and
7 repeating the steps of delivering positive pressure breaths and extracting
8 respiratory gases.

1 2. (Original) A method as in claim 1, wherein the person is suffering from
2 ailments selected from a group consisting of head trauma associated with elevated intracranial
3 pressures, low blood pressure, low blood circulation, low blood volume, cardiac arrest and heart
4 failure.

1 3. (Original) A method as in claim 1, further comprising regulating the
2 amount of intrathoracic vacuum using a threshold valve that is in fluid communication with the
3 person's airway.

1 4. (Original) A method as in claim 3, wherein the threshold valve is
2 configured to open when the person's negative intrathoracic pressure reaches about -3 cm H₂O
3 to about -20cm H₂O to permit respiratory gases to flow into the person's airway.

1 5. (Original) A method as in claim 3, further comprising stopping
2 application of the vacuum when applying the positive pressure breath using a switching
3 arrangement.

1 6. (Original) A method as in claim 1, wherein the positive pressure breath is
2 delivered using source selected from a group consisting of a mechanical ventilator, a hand held
3 bag valve resuscitator, mouth-to-mouth, or a means to provide intermittent positive pressure
4 ventilation.

1 7. (Original) A method as in claim 1, wherein the respiratory gases are
2 extracted with a constant extraction, varied over time, or a pulsed extraction.

1 8. (Original) A method as in claim 1, wherein the breath is delivered for a
2 time in the range for about 250 milliseconds to about 2 seconds.

1 9. (Original) A method as in claim 1, wherein the breath is delivered at a
2 rate in the range from about 0.1 liters per seconds to about 5 liters per second.

1 10. (Original) A method as in claim 1, wherein the vacuum is maintained at a
2 pressure in the level from about 0 mmHg to about -50 mmHg.

1 11. (Original) A method as in claim 10, wherein the vacuum is maintained
2 with negative flow or without flow.

1 12. (Original) A method as in claim 1, wherein the time the positive pressure
2 breath is supplied relative to the time in which respiratory gases are extracted is in the range
3 from about 0.5 to about 0.1.

1 13. (Original) A method as in claim 1, wherein the respiratory gases are
2 extracted using equipment selected from a group consisting of a mechanical ventilator, a vacuum
3 with vacuum regulator, a phrenic nerve stimulator, an extrathoracic vest, a ventilator bag, and an
4 iron lung cuirass device.

1 14. (Original) A method as in claim 1, wherein the respiratory gases are
2 lowered to an intrathoracic pressure of about -5 mmHg to about -10 mmHg and then kept
3 generally constant until the next positive pressure breath.

1 15. (Original) A method as in claim 1, wherein the positive breath is slowly
2 delivered and the respiratory gases are rapidly lowered to an intrathoracic pressure of about -5
3 mmHg to about -20 mmHg and then gradually reduced towards about 0 mmHg.

1 16. (Original) A method as in claim 1, wherein the respiratory gases are
2 slowly lowered to a pressure of about – 5 mmHg to about -20 mm Hg.

1 17. (Original) A device for lowering intrathoracic pressures, the device
2 comprising:
3 a means to interface with the patient's airway;
4 a means to repeatedly extract respiratory gases from the patient's lungs and
5 airway to create and periodically maintain a negative intrathoracic pressure;
6 a means to repeatedly regulate the extraction of respiratory gases within the
7 patient's lungs and airway; and
8 a means to deliver a positive pressure breath, to periodically provide inspiration of
9 respiratory gases.

1 18. (Original) A device as in claim 17, wherein the means to extract
2 respiratory gases comprises vacuum source selected from a group consisting of a suction line or
3 venturi device attached to an oxygen tank

1 19. (Original) A device as in claim 17, further comprising a switching
2 mechanism to stop the extraction of respiratory gases during delivery of a positive pressure
3 breath, wherein the switching mechanism is selected from a group consisting of mechanical
4 devices, magnetic devices, and electronic devices.

1 20. (Original) A device as in claim 17, wherein the means for extracting
2 respiratory gases is selected from a group consisting of a mechanical ventilator, a vacuum with
3 vacuum regulator, a phrenic nerve stimulator, an extrathoracic vest, a ventilator bag, and an iron
4 lung cuirass device.

1 21. (Original) A device as in claim 17, wherein the means for regulating
2 comprises a threshold valve that is in fluid communication with the person's airway.

1 22. (Original) A device as in claim 21, wherein the threshold valve is
2 configured to open when the person's negative intrathoracic pressure reaches about -3 cm H₂O
3 to about -20cm H₂O to permit respiratory gases to flow into the person's airway.

1 23. (Original) A device as in claim 17, wherein the means for delivering a
2 positive pressure breath is selected from a group consisting of a mechanical ventilator, a hand
3 held bag valve resuscitator, mouth-to-mouth, or a means to provide intermittent positive pressure
4 ventilation.

1 24. (Original) A device for lowering intrathoracic pressures, the device
2 comprising:
3 a housing having an interface that is adapted to couple the housing to the person's
4 airway;
5 a vacuum source in fluid communication with the housing for repeatedly
6 extracting respiratory gases from the person's lungs and airway to create and periodically
7 maintain a negative intrathoracic pressure;
8 a vacuum regulator to regulate the extraction of respiratory gases from the
9 patient's lungs and airway; and
10 a positive pressure source in fluid communication with the housing for
11 intermittently supplying positive pressure breaths to the person.

1 25. (New) A pressure regulator, comprising:
2 a housing having a patient interface that is adapted to be coupled to a person's
3 airway, a vacuum interface that is adapted to be coupled to a vacuum source and a positive
4 pressure interface that is adapted to be coupled to a source of positive pressure;
5 a switching mechanism to alter respiratory gas flows within the housing such that
6 a vacuum may be provided at the patient interface while a vacuum is being applied at the

7 vacuum interface, and positive pressure ventilation may be provided at the patient interface while
8 positive pressure is being applied at the positive pressure interface.

1 26. (New) A pressure regulator as in claim 25, wherein the switching
2 mechanism is configured to stop the application of the vacuum at the patient interface during
3 delivery of a positive pressure breath at the positive pressure interface, and wherein the
4 switching mechanism is selected from a group consisting of mechanical devices, magnetic
5 devices and electronic devices.

1 27. (New) A pressure regulator as in claim 25, further comprising a means for
2 regulating the vacuum provided at the patient interface.

1 28. (New) A pressure regulator as in claim 27, wherein the means for
2 regulating comprises a threshold valve that is configured to open when the person's negative
3 intrathoracic pressure reaches about -3 cm H₂O to about -25 cm H₂O to permit respiratory gases
4 to flow into the person's airway through the patient interface.

1 29. (New) A pressure regulator as in claim 25, further comprising a means
2 for regulating the position pressure ventilation provided at the patient interface.

1 30. (New) A pressure regulator as in claim 27, wherein the means for
2 regulating the vacuum is configured to receive information on at least one physiological
3 parameter of the patient to alter the applied vacuum based on the received information.

 31. (New) A pressure regulator as in claim 25, further comprising a pressure
measurement devices that is configured to measure one or more pressures.